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Dairy Farming in Stearns County:
Summary and Analysis of the 2000 Dairy Farm Survey

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Summary and Analysis of the 2000 Dairy Farm Survey

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Introduction

NE-177 is a regional research project studying structural change in dairy. In Minnesota, structural change is seen as changes in farm numbers and farm size. Within the State, dairy farm numbers have declined. Table 1 shows changes in dairy farm numbers by herd size. The number of farms with herds of less than 100 cows has declined while the number of farms with herds of more than 200 cows has shown an increase.

Table 1: Number of Farms by Herd Size in Minnesota 1993-2000

Year	Total	1-29 head	30-49 head	50-99 head	100-199 head	200+ head	200-499 head	500+ head
1993	13500	3300	5200	4200	730	70		
1994	12500	2900	4700	4100	720	80		
1995	12000	2500	4500	4100	780	120		
1996	11000	2100	4100	3800	830	170		
1997	10500	1900	3800	3700	850	250	230	20
1998	9700	1600	3500	3500	800		260	40
1999	9100	1400	3300	3400	700		250	50
2000	8500	1300	3000	3200	700		250	50

Changes in the number of farm and farm size impacts both those directly involved in dairy farming, as well as the communities where dairying is a major activity. How are dairy farmers coping with changes in the industry? What technologies are farmers using? How do dairy farmers interact with their communities? What is the economic impact of dairy in rural communities? These are the types of questions that are being addressed in the NE-177 regional research project.

The area of study in Minnesota is Stearns County, the largest dairy county in the State. In January of 2000, there were 1076 dairy farmers in Stearns County. Average

herd size in Stearns County in 1999 was 58 cows[1]. An extensive survey form was mailed to every dairy farmer in Stearns County on January 25, 2001. Of the 1076 dairy farms, 974 shipped Grade A milk and 102 shipped Grade B milk. Farmers were asked to return the survey form even if they chose to not complete it. There were 283 surveys returned with 227 of those completed. The usable response rate was 21.1%. Some farmers chose not to complete all sections. The initial section on farm characteristics had to be completed in order for the survey to be usable.

The survey consisted of 10 sections: farm characteristics, production practices, changes in cow number & expansion experiences, cropping practices, forage and pasture management, manure & nutrient management, demographics & community characteristics, financial information, community acceptance of dairy farming and goals & plans. The remainder of this paper summarizes the survey responses in each of the 11 areas.

Farm Characteristics

Table 2 presents summary descriptions of dairy farms. Data represents information for 1999. Average number of milk cows on the survey farms as of January 1, 2000 was 59.8 cows. The average number of dry cows was 11.4. The survey farms had an average herd size of 71.2 cows. Average herd size in Stearns County in 1999 was 58.3 cows. This included both lactating and dry cows. The survey farms were larger than the average farm size for the County. On average, farms raised 93.3% of their replacement heifers.

[1] Minnesota Agricultural Statistics 2000. Minnesota Agricultural Statistics Service.

Table 2: Livestock Inventories On Stearns County Dairy Farms, 1999

	Mean	Standard Deviation	Number of farms reporting
Lactating cows (Jan 1, 2000)	59.8	47.3	227
Dry Cows (Jan 1, 2000)	11.4	16.9	226
Percent of replacements raised on farm	92.6%	21.9	227
Other dairy or beef cattle (bred heifers, calves & steers)	66.1	69.5	225

The majority of the farms (176) reported having a stanchion or tie stall barn with a pipe-line, representing 79% of respondents. Milking parlors were found on 15 percent of the respondents' farms. Eight farms used a stanchion or tie stall barn with pails and 5 farms had a stanchion barn with flat parlor (fewer stanchions than cows). Table 3 presents facilities by herd size for those farmers reporting the number of dairy cows on their farm in 1999.

Table 3: Type of Facilities by Herd Size, Stearns County Dairy Farms 1999

Facility Type	Number of farms reporting by herd size						
	<40	40-79	80-119	120-159	160-259	> 250	Percent of total
Stanchion barn and pails	8	0	0	0	0	0	3.6
Stanchion barn and pipeline	33	120	21	2	0	0	79.3
Stanchion barn with flat parlor	0	3	2	0	0	0	2.2
Parlor system	2	11	6	7	4	3	14.9
Total	43	134	29	9	4	3	100.0
Percent	19.4	60.4	13.1	4.0	1.8	1.3	

Table 4 shows production on the survey farms in 1999. Dividing by the average number of lactating cows, production per cow per day is 59.9 pounds. The rolling herd

average of the respondents' herds was 20,068.9 pounds. Assuming a 305-day lactation, a calculated rolling herd average (59.9 lbs/cow/day * 305 days) is 18,269. The rolling herd average on the survey appears to be overstated.

Table 4: Milk Production and Number of People Milking, Stearns County Dairy Farms, 1999

	Mean	Standard Deviation	Number of farms reporting
Pounds of milk shipped per day	3,582.9	3392.8	218
Rolling herd average	20,068.9	3054.8	166
Number of people milking (per milking)	1.5	0.6	228

Production Practices

A number of questions related to production practices were asked. Table 5 presents record keeping system information. The majority of farmers use some type of production record-keeping system, with DHIA being the most commonly used system. However, 22 percent of respondents indicated they do not keep production records.

Table 5: Herd Production Record Keeping Systems on Stearns County Dairy Farms, 1999

	Number of farms	Percent of total
Do not keep herd production records	50	22.1
Dairy Herd Improvement (DHI) Association	141	62.4
Other private record keeping service	9	4.0
Keep own records on computer or paper	26	11.5

It is common for farmers to adjust feed rations for individual cows or groups of cows based on stage of lactation or levels of milk production. Stearns County dairy farmers are no exception with 76% of respondents indicating they did adjust feed rations.

Table 6 presents a summary of technologies and practices that are used on dairy farms. There are some variations in milking practices. While 84% of farms postdip teats

after milking, only 54% predip teats before milking. Milking 3 times a day is not a common practice. Only 5% of farms use a seasonal milking program. The seasonal milking is defined as having 2-3 months where all cows are dry.

Feeding practices and technologies show 74% of farms balance rations at least 4 times a year. This is comparable to the 76% of farms who adjust feed rations based on stage of lactation or production level.

Computer technology and use tells an interesting tale as well. While 60% of farmers own a computer and use it for personal use, only 41% percent of farmers use the computer for farm record keeping. Internet usage is low with only 27% of respondents access the internet for farm related information. Internet usage is slightly higher for non-farmer related uses at 29%.

Table 6: Technologies and production Practices, Stearns County Dairy Farms, 1999

	Percent of farms
Predip all teats before milking	54
Postdip all teats after milking	83
Use regularly scheduled veterinary services	64
Balance feed rations at least 4 times a year	74
Use total mixed ration (TMR) machinery	38
Use artificial insemination (AI) on at least 75% of heifers	71
Use freestall housing for the milking herd	38
Milk your cows three times a day	2
Use seasonal milking program (2-3 months when all cows are dry)	5
Own and use a computer for personal and family use	60
Own and use a computer for farm record keeping	40
Access information for the farm over the internet	26
Access non-farm related information over the internet	30
Participate in the Dairy Diagnostics program	8
Participate in the Stearns County Farm Management program	19

The use of Posilac ™(rbST or BGH) was reported on 27% of the farms. Those farmers who did use Posilac™, 53% of milking herd received it. When asked if rBST

was ever used on any of the cows, 21% of respondents indicated they had tried rbST in the past but are not currently using it.

Changes in Cow Numbers and Expansion Experiences

Farmers were asked how many cows, both lactating and dry, they had in 1994, 1999 and expected to have in 2004. Average herd size in 1994 was 54 cows. In 1999 average herd size was 67 cows. It was expected to be 89 cows by 2004. Expansion in terms of herd size is expected to continue.

Thirty-five respondents indicated they expect to quit dairying before 2004. These farms had an average herd size of 58 cows in 1994 and 56 cows in 1999. Average daily milk shipped from these farms in 1999 was 2395 pounds, which is less than the sample average of 3,583 pounds.

Table 7 shows how farms changed, in terms of cow numbers from 1994 to 1999. There were 8 new farms in 1999. These were people who had no cows in 1994 but had cows in 1999. The new farms were relatively small, less than120 cows.

There are some interesting points to make as one looks at the pattern of expansion. There were 3 farms that reduced their herd size from 1994 to 1999, 2 farms reduced from 41-79 to 40 or fewer and one farm reduced from 80-199 to 41-79 cows. The largest change came in the 41-70 cow group. There were 22 farms that increased herd size by one group. That is, in 1994 there were 22 farms milking 40 or fewer cows that expanded their herds to 41-79 cows by 1999. Most of the farms that expanded from 1994 to 1999 moved up one size class. The exceptions to this are the 3 farms that expanded from <160 cows in 1994 to >250 cows in 1999.

Table 7: Farm Numbers by Herd Size 1994 and 1999, Stearns County Dairy Farms

Cows in 1994	Cows in 1999						
	≤40	41-79	80-119	120-159	160-250	>250	Total
0	3	4	1	0	0	0	8
≤40	38	22	0	0	0	0	60
41-79	2	106	12	1	1	0	122
80-119	0	1	16	4	2	2	25
120-159	0	1	0	4	0	1	6
160-250	0	0	0	0	1	0	1
>250	0	0	0	0	0	0	0
Total	43	134	29	9	4	3	

It is also interesting to look at how the numbers of farms by size group are expected to change. Most of the farmers who are thinking about exiting dairy farming have herds of less than 80 cows. A total of 34 farmers indicated they would no longer have dairy cows in 2004. A total of 29 farms indicated they would be expanding their herds by 2004. Most of those who said they would be increasing their herd size would move up one class size. For example, 17 farmers who milked 41-79 cows in 1999 indicated they would be milking 80-119 cows in 2004. None of the farmers milking fewer than 120 cows in 1999 indicated that they would be expanding to more than 250 cows.

Table 8: Farm Numbers by Herd Size 1999 and 2004, Stearns County Dairy Farms

Cows in 2004	Cows in 1999						
	≤40	41-79	80-119	120-159	160-250	>250	Total
0	11	18	4	1	0	0	34
≤40	24	2	0	0	0	0	26
41-79	6	88	1	0	0	0	95
80-119	1	17	19	1	0	0	38
120-159	0	1	4	4	0	0	9
160-250	0	1	1	1	2	0	5
>250	0	0	0	2	2	3	7
Total	42	127	29	9	4	3	

Post Expansion Perceptions

A number of questions were asked relating to the expansion process. There were some respondents, 21, who indicated they expanded their operation by more than 40 cows between 1994 and 1999. Expanding by at least 40 cows was seen as a major addition of cows.

The reasons for expansion varied. Increasing their farm's profitability was a reason for expanding for 17 of the respondents. Improving the physical working conditions was cited by 13 of the respondents. Getting time off the farm by allowing more hired labor to be brought in was a reason for expansion cited by 10 of the respondents. Allow a family member to join the farm operation was a reason cited for the decision to expand for 6 of the respondents.

When asked the question "Knowing what you do now, would you do it again?" 3 respondents said no, 7 farmers indicated yes, the same way, 7 said yes, only quicker and 3 farmers said yes, only bigger.

Farmers were asked to compare their current operation's performance relative to before expansion in a number of areas. On a 1-5 scale, with 1 being much worse and 5 being much better, the number of responses at each ranking and the average ranking is presented in table 9.

All categories showed improvement after expansion. With respect to the dairy operation, only 1 farm saw production levels being worse after expansion. Culling rate was worse on 4 farms and much worse on 1 farm after the expansion. Most farms saw no change in heat detection or conception rates. 45% of farms saw improvements in detection while 41% of farms saw improvement in conception rates following expansion.

Table 9: Changes in Farm Performance After Expansion, Stearns County Dairy Farms, 1999

DAIRY OPERATION	1	2	3	4	5	Average
Milk production level		1	7	7	6	3.8
Culling rate	1	4	6	7	3	3.2
Animal health		1	8	7	5	3.7
Heat detection			11	9	1	3.5
Conception rate			12	8	1	3.4
Calving interval		1	9	10	1	3.5
ECONOMICS						
Production costs per cwt		2	7	8	4	3.6
Net farm income		1	7	9	4	3.7
PERSONAL LIFE						
Neighbor relations		2	10	7	2	3.4
Disposable household income		2	7	10	2	3.5
Relationship with spouse and family		2	6	11	2	3.6
Time off the farm		3	5	8	4	3.6
Overall quality of life	1	1	6	11	2	3.5

Production costs per cwt improved on 55% of the farms post expansion while net farm income increased on 59% of the farms.

On average, personal life as measured by neighbor relations, disposable household income, relationship with spouse and family, time on farm and overall quality of life improved after expansion. Overall quality of life improved for 50% of farm operations. It is interesting to note that 2 of the respondents indicated that overall quality of life was worse after expansion.

Producers who have expanded often talk about activities during the expansion that caused them difficulty. With 1 being most difficult and 5 being least difficult, respondents were asked to indicate the relative difficulty they experienced with a number of activities during their expansions. The results are summarized in table 10. Most

difficult problems appear to be problems with maintaining healthy feet and legs and finding animals to purchase to fill the barn after expansion. Feed procurement is the least difficult problem during expansion.

Table 10: Difficulties Faced During the Expansion, Stearns County Dairy Farms, 1999

	1	2	3	4	5	Average
Permitting and zoning	2	3	3	6	4	3.4
Financing and loan procurement	1	3	5	6	3	3.4
Facility design and site selection		4	4	3	6	3.7
Construction and cost overruns		3	4	7	5	3.7
Finding labor	2	2	2	3	8	3.8
Managing labor	1	2	5	5	5	3.6
Labor turnover	2	2	3	3	8	3.8
Finding animals	3	2	3	3	7	3.5
Procuring feed			3	6	9	4.4
Animal health – udder health	1	2	4	5	6	3.6
Animal health – feet and legs	1	5	5	4	3	3.2
Animal health – reproduction	1	3	9	2	3	3.1

Cropping Acreage

The average farm size was 315 acres with 237 acres being owned and 78 acres being rented. The majority of farmers, 94%, raised crops as part of their farm enterprise. In 1997 the average size of dairy farms in Minnesota was 332 acres [2]. Cropping acreage is summarized in table 11. Grain corn accounted for most of the cropping acreage, followed by hay or haylage and corn silage.

[2] 1997 Census of Agriculture

Table 11: Average Cropping Acreage, Stearns County Dairy Farms, 1999

	Average Acres	Standard Deviation	Number of farms
Grain Corn	91.0	95.0	213
Hay or haylage	73.0	50.1	213
Corn for silage	42.5	37.8	213
Soybeans	29.2	75.5	213
New seedings of hay	17.7	20.7	213
Oats, barley & other small grains	18.4	26.3	213
Other crops	1.7	7.2	213

Forage and Pasture Management

Most Minnesota dairy farmers produce the forage that is fed to the cows on the farm. Typically, very little forage is purchased. On average 92% of the hay, haylage and corn silage fed to the dairy herd was grown on the survey farms.

The use of pastures for at least part of the forage ration for lactating cows was low, with 24% of the farmers using pasture for at least part of the forage ration for their lactating cows. Of those who were using pasture for forage, 38% (21 respondents) used them as the primary source of forage during the grazing season. Of those who did use pastures as the primary source of forage, 12 farmers moved the grazing lactating cows to fresh pasture at least once a week and most, 7 of the 12 farmers moved the lactating cattle once a day.

Manure and Nutrient Management

A number of survey questions related to the storage and spreading of manure. On the positive side, the majority of farmers (55%) store manure in a lined structure (concrete pit, slurry system, clay-lined basin). However, 33% of the farmers put manure directly into the spreader and/or spread daily. Manure handling systems are summarized

in table 12. The average storage capacity on the farms is 27 weeks. That is, on average the farms can store up to 27 weeks worth of manure before the storage system is filled to capacity. Only 11% of respondents received cost sharing monies from a federal, state or local government agency to help build manure storage facilities.

Table 12: Manure Storage on Farms by Herd Size, Stearns County Dairy Farms, 1999

Storage system	Number of farms reporting by herd size					
	<40	40-79	80-119	120-159	160-259	> 250
Put manure directly into the spreader and/or spread daily	28	42	5	0	0	0
Pile manure on the ground or on a slab or in an unlined manure storage basin	4	10	4	0	0	0
Leave the manure in the barn/building for more than a few days	0	3	0	1	0	0
Store manure in a lined structure	10	77	19	8	4	4
Other	0	3	1	0	0	0

An average of 113 acres per farm received manure in 1999. Given the average farm size was 317 acres, approximately 35% of the farm acres received manure in 1999. The majority of farmers indicated they soil test their cropland at least every 2-3 years, with 27 % testing at least once a year and 47% testing every 2-3 years. When manure is applied to cropland, 83% of farmers usually adjust the rate of commercial fertilizer application based on the nutrient content of the manure. Put another way, many farmers are crediting the manure applications when making fertilizer application decisions.

Demographics and Community Characteristics

Age, Marital Status and Education

The average age of farmers who returned the survey was 46 years. The 1997 Census of agriculture had the average age of dairy farmers in Minnesota at 48 years. The average age when the surveyed farmers began farming was 23 years. Eighty-six percent of the respondents were married and the average age of the spouse was 44 years.

The majority of respondents (63%) have a high school diploma or equivalent. 50% of the spouses had some high school diploma or equivalent. A breakdown of respondents and spouses by highest by level of education completed is given in table 13.

Table 13: Percent of Respondents by Highest Level of Education Completed, Stearns County Dairy Farms, 1999

	Respondent (%)	Spouse (%)
Attended grade school	2.7	2.6
Some high school	5.8	4.7
High school diploma or equivalent	63.3	50.5
Some college but didn't receive a degree	9.3	6.3
Completed trade school or formal apprenticeship program	10.2	16.1
Completed a two-year College Degree	3.5	9.4
Completed a 4-year college degree	5.3	8.3
Completed a graduate degree	0	2.1

Off-farm Employment and Hired Labor

When looking at regular off farm employment (either full time or part-time), 91% of respondents indicated they did not work off the farm in 1999. Off-farm employment for the spouse was higher, with 39% of spouses working either full-time or part-time off the farm.

Only 21% of the respondents indicated they hired regular farm employees. Regular farm employees are workers who help out throughout the year. They do not include household members, seasonal workers or custom work. Of those who hired regular workers, 1 full time and 1 part time workers were the average number of employees hired.

When asked how hard it is to find good people to work on dairy farms in this area 44% said it was very hard and 33 % said it was somewhat hard. Only 12% indicated it was fairly easy to find good people to work on the dairy farm and the remainder indicated they did not know how hard it was to find good people.

Accessing Farm-Related Information

Where farmers' access information has always been of great interest. The question was asked, 'How much quality information do you receive from the following sources?' The responses could be *No Useful Information*, *Some Useful Information* and *A Lot of Useful Information*. The responses are summarized in table 14. The first point of interest is farmers get a lot of useful information through conversations with other farmers and farm magazines and books. The second point of interest is that 72% of respondents indicated they got no useful information in agricultural issues from the World Wide Web (internet).

Table 14: Farm Information Sources, Stearns County Dairy Farms, 1999

	No Useful Information (%)	Some Useful Information (%)	A lot of Useful Information (%)
Computer –World Wide Web	72.5	22.1	5.4
Conversations with other farmers	3.2	56.1	40.7
University of Minnesota Extension Service	19.2	67.0	13.8
Farm magazines and books	2.2	65.5	32.3
Minnesota Department of Agriculture	21.9	68.8	9.4
Newspapers	11.5	75.7	12.8
Television/Radio	15.6	69.2	15.2
USDA agencies	17.1	72.1	10.8

Community Attachment and Involvement

Respondents were asked to rank how involved they and/or their spouse were in a number of community organizations. Responses are summarized in table 15. The majority of respondents are not very involved in community organizations. The exception to that statement is involvement in Church groups.

Table 15: Involvement in Community Organizations

	Not Involved (%)	Somewhat Involved (%)	Very Involved (%)
Farm Organizations	60.4	36.1	3.5
Civic Organizations	90.2	8.4	1.3
Athletic/recreational groups	52.9	31.3	15.9
Educational/school groups	64.6	30.0	5.4
Community government	65.2	23.3	11.5
Church groups	40.3	38.1	21.7

When asked about satisfaction with their family's current quality of life, 81 % of respondents said they were satisfied or very satisfied with their current quality of life. People were asked to assess how their quality of life had changed over the past 5 years. 49% of respondents said their quality of life had become better over the past 5 years. On

the flip side, 38% indicated their quality of life had remained the same while 13% saw their quality of life become worse over the past 5 years.

Urban pressure and neighbors who do not farm often impact the production practices used on farms. When asked to describe the area where their farm is located, 48% said other farms mostly surrounded their farm and 30% said a mix of non-farm residences and farms surrounded their farm. Only 2% indicated they were surrounded by non-farm development.

Non-farming neighbors can influence the practices farmers might use on their farm. Only 7% of respondents have ever had complaints from neighbors about odor, noise or flies from their farm. The low level of complaints is not surprising given only 2% of the farm were surrounded by non-farm development. It is also interesting to note that 10% of respondents have thought about or planned to make a change to their farm operation but did not follow through on the plan because of concerns about how the neighbors might react to the change.

Most respondents (62%) indicated they knew their neighbors very well. Only 2% said they did not know their neighbors very well. Not surprisingly, 82% percent of respondents saw dairy farming as very important to the economy of their community. It is surprising that 9% of respondents saw dairy farming as not very important to the economy of their community.

Community Acceptance of Dairy Farming

Farmers were asked to identify the major way in which dairy farming had changed in the area over the past 10 years. These results are summarized in table 16. It

is clear that farmers are seeing a decline in the number of dairy farms and the farms that are remaining are getting bigger.

Table 16: Perceptions of Changes in Dairy Farms, Stearns County Dairy Farms, 1999

	Percent of respondents
Dairy farms are being replaced by non-farm uses	29
There are fewer dairy farms	80
Dairy farms are being replaced by other kids of farms	27
Dairy farms are getting bigger	73
There are more dairy farms	0

Farmers were also asked to identify the ways in which their communities had changed over the past 10 years. Table 17 summarizes the responses. One worrisome result is the number of respondents who feel the community has become less supportive of dairy farming.

It is interesting to note that 56% of respondents indicated there had been an increase in non-farming neighbors. Yet only 32% described their farms as being surrounded by non-farm development or a mix of no-farm residences and farms.

Table 17: Perceptions of Changes in the Community, Stearns County Dairy Farms, 1999

	Percent of respondents
There has been an increase in non-farming neighbors	56
There has been a population loss	13
New industries or businesses have moved in	24
Existing industries or businesses have closed or left	16
The community or more supportive of dairy farming	9
The community or less supportive of dairy farming	36
The community has not changed much	35

Farming Goals and Plans

Farmers were asked to rank a number of goals on the basis of how important they were when making important farm decisions. The scale is from 0 to 4, where 0 is not important at all and 4 is very important. Results are summarized in table 18 with the

number of respondents shown at each level. Most farmers indicated that maximizing production, both per cow and per farm and minimizing costs were important goals to consider when making major farm decisions. It is interesting to note productivity per worker and ensuring the farm was passed on to a family member were less important goals when it came to major farm decisions.

Table 18: Goals and Major Farm Decisions, Stearns County Dairy Farms, 1999

	0	**1**	**2**	**3**	**4**
Maximize productivity (milk output) per cow	7	5	30	57	125
Maximize productivity (milk output) per worker	35	19	46	50	68
Maximize the overall amount of milk sold from this farm	7	5	24	66	122
Minimize the use of purchased inputs	10	8	35	72	97
Reduce debt load	14	7	22	42	138
Avoid taking on new debt	5	10	45	56	107
Reduce the cost per cwt of producing milk	3	2	22	70	125
Reduce the per unit costs of producing feed	6	4	32	74	107
Ensure the farm will be taken over by a family member	45	45	53	34	43

As farmers looked ahead over the next 3-5 years they were asked how likely they were to make major changes in their farming operations. These results are summarized in table 19. The results provide lots of food for thought. One-third of respondents indicated they were likely or very likely to close down completely over the next 3-5 years. Almost the same number, 36%, indicated they were likely or very likely to add more cows over the next 3-5 years. Almost 50% of respondents said it was likely they would remain about the same as they are now.

Table 19: Percent of Respondents Who Anticipate Making Major Changes to Their Operations

	Very Unlikely	Unlikely	Likely	Very Likely
Close down completely	48.4	27.8	16.1	17.0
Add more cows	35.4	28.7	26.9	9.0
Reduce the number of cows	52.5	30.0	10.3	7.2
Disperse the herd	46.2	29.6	13.5	10.8
Add/expand to other enterprises	42.6	28.7	23.8	4.9
Transfer management to another person	47.5	32.3	16.6	3.5
Combine our dairy with another farm	62.5	30.4	5.4	1.7
Make major improvements to facilities	28.6	36.6	26.8	8.0
Remain about the same as now	11.7	18.4	49.8	20.2
Add more land	30.4	37.9	27.7	4.0
Sell off land	63.7	27.8	4.5	4.0
Sell off machinery	54.9	30.8	9.8	4.5

Farmers were asked their opinions about the future of the Minnesota dairy industry. Results are summarized in table 20. There are a couple of concerning issues raised by the responses. Seventy-four percent of producers feel that Agribusiness firms manipulate farm prices to the disadvantage of markets. The divisiveness of large versus small is clear in the last 2 questions. Sixty-one percent of respondents felt the replacement of smaller family farms with large-scale farms would have undesirable economic and social consequences for Minnesota. Seventy-five of respondents disagreed that more large dairy operations and other large farms are needed to increase the competitiveness of Minnesota agriculture.

Table 20: Respondents' Opinions of the Future of the Minnesota Dairy Industry

	Strongly disagree (%)	Disagree (%)	Not Sure (%)	Agree (%)	Strongly agree (%)
Many older farmers in Minnesota cannot afford to retire, and they wind up farming longer than they like	5.8	17.9	17.5	40.4	18.4
The state and federal governments should take immediate action to do everything necessary to boost milk prices for Minnesota farmers	2.3	11.8	14.9	26.2	44.8
Agribusiness firms manipulate farm prices (for example, on commodity futures markets or the Green Bay Cheese Exchange) to the disadvantage of farmers	2.3	5.9	17.6	32.0	42.3
Minnesota farmers should organize to exert more control over the milk marketing and pricing system	0.9	6.3	18.5	45.5	28.8
I would encourage my children to become dairy farmers	19.4	18.0	32.7	18.4	11.5
The replacement of smaller family farms by large-scale farms using hired labor would have undesirable economic and social consequences for the state of Minnesota	5.0	15.3	18.0	25.2	36.5
More large dairy operations and other large farms are needed to increase the competitiveness of Minnesota agriculture	38.7	36.5	16.2	5.9	2.7

Economic Information

A number of questions were asked related to the economic performance of the dairy farms. This information will be used to assess the economic contribution dairy farming makes to local communities and the state of Minnesota. Not all farmers

completed all of this section of the survey. Some farmers chose to skip the sections related to asset value and expenditures on farm inputs.

Multi-family farms are becoming more common. Father-son operations or siblings farming a single unit are not uncommon. There were 12% of the farms responding that had more than one household sharing the net income and paying some of the expenses. In addition to the respondents family there were 1.5 other families, on average, sharing in the farm income and expenses. It is important to know that as farm size increases, the number of families drawing a living from the farm also often increase.

Milk Sales

The distribution of farms by total farm receipts is given in table 21. A total of 217 of the 227 farms completed this question. Most of the survey farms fell in the $100,00 to $499,999 total farm receipts class.

Table 21: Distribution of Farms by Total Farm Receipts, Stearns County Dairy Farms, 1999

Total farm receipts	Percent of respondents
<$40,000	3.2
$40,000 to $74,999	9.7
$75,000 to $99,999	6.9
$100,000 to $149,999	26.7
$150,000 to $199,999	18.4
$200,000 to $249,999	11.5
$250,000 to $499,999	18.9
$500,000 to $749,999	2.3
$750,000 to $999,999	0.5
$1,000,000 or more	1.8

The farms surveyed were dependent on dairy with most of the gross sales were derived from milk sales. Fifty-three percent of the 223 respondents who answered the question on milk sales indicated more than 90% of total farm receipts came from the sale

of milk and milk products. Another 47% indicated that most (50% to 89%) of total farm receipts came from the sale of milk or milk products.

As an indicator of reliance on agriculture as a primary source of income, 63% of respondents said all of the household income is from farming and 25 percent said more than half of their household income comes from farming. 225 farmers responded to the question relating to farm income as a percent of household income.

Debts and Asset Values

Farms surveyed in Stearns County tended to have very little farm debt. Twenty percent of the farms carried no debt, short term, intermediate term or long term (223 respondents). Of those who did carry debt, 24% had debts less than 10% of asset values, 50% had debts between 10% and 40% of asset values and 26% had debts that were over 40% of asset values. Average asset values are summarized in table 22. There were 172 farmers who reported asset values. The farmers estimated the asset values at fair market value.

Table 22: Average Asset Value as of January 1, 2000, Stearns County Dairy Farms

Asset	Value
Land and buildings	$303,590
Farm livestock	$109,956
Crops and feed on hand	$37,970
All farm machinery, trucks and cars	$140,533
All other farm business assets	$27,624

Farm Input Purchases

Farmers were asked to list the amount they spent on farm inputs in 1999. Table 23 summarizes farm spending on inputs. A total of 223 farmers responded to the question

about input expenditures. Farmers were also asked to identify the percentage of the input purchased within Stearns County. The average percentage in Stearns County spent on each item is also reported. There were some farms that did not purchase fertilizer (6% of farms), chemicals (4% of farms) or seed (3% of farms).

Table 23: Average Farm Input Purchases, Stearns County Dairy Farms, 1999

	Dollars spent/farm	Percent purchased in Stearns County
Feed	$36,822	88.7
Fertilizer	$6,584	83.7
Chemicals	$5,539	86.1
Seed	$5,573	87.2
Gas, fuel & oil	$4,192	93.7
Repairs & maintenance	$91	91.4

Household Purchases

Farmers were asked to identify where they make the majority of their household purchases. If the majority of purchases were made in Stearns County, they were then asked to identify the town where the majority of the purchases were made. The majority of household purchases are made with Stearns County. Table 24 summarizes where, within the state, household purchases are made. Tables 25-30 show the locations in Stearns County where the purchases are being made.

Table 24: Location of Household Purchases

	Stearns County	Twin Cities	Elsewhere in Minnesota	Outside Minnesota	Did not Purchase
Food	97.3	0.4	1.8	0	0.4
Clothing	91.9	0.9	6.7	0	0.4
Household Supplies	95.0	4.1	0.5	0	0.5
Healthcare	88.7	2.3	5.9	0.9	2.3
Automobile	81.6	0.9	8.1	0	9.4
Appliances and other durable goods	90.1	0.5	5.4	0	4.1

Table 25: Percent of Respondents Purchasing Food Items in Local Communities

	Percent of respondents
Albany	3.4
Belgrade	0.6
Cold Spring	2.9
Eden Valley	0.6
Freeport	1.1
Melrose	13.7
Richmond	1.1
St. Cloud	66.2
Paynesville	6.9

Table 26: Percent of Respondents Purchasing Clothing Items in Local Communities

	Percent of respondents
Cold Spring	0.6
Melrose	0.6
St. Cloud	97.4
Paynesville	1.4

Table 27: Percent Respondents Purchasing Household Supplies in Local Communities

	Percent of respondents
Albany	2.5
Cold Spring	1.9
Freeport	1.9
Melrose	7.6
St. Cloud	78.5
Paynesville	7.6

Table 28: Percent of Respondents Purchasing Health Services in Local Communities

	Percent of respondents
Albany	11.6
Belgrade	1.4
Cold Spring	3.3
Elrosa	0.7
Melrose	21.8
Richmond	0.7
St. Cloud	46.9
St. Joseph	0.7
Paynesville	12.9

Table 29: Percent of Respondents Purchasing Automobiles in Local Communities

	Percent of respondents
Albany	8.3
Belgrade	2.3
Cold Spring	4.6
Elrosa	0.7
Freeport	0.7
Greenwald	0.7
Holdingford	0.7
Lake Henry	0.7
Melrose	9.7
Richmond	0.7
St. Cloud	56.0
Upsala	1.5
Watkins	3.0
Paynesville	10.4

Table 30: Percent of Respondents Purchasing Durable Goods in Local Communities

	Percent of respondents
Albany	7.5
Belgrade	0.7
Eden Valley	0.7
Freeport	8.2
Holdingford	0.7
Kimball	0.7
Melrose	5.5
St. Cloud	63.7
St. Martin	2.7
Paynesville	9.6

Farmers' Comments

The following comments are a representative sample of responses taken from the 2000 survey of Stearns County dairy producers. For convenience, direct and paraphrased quotes have been grouped and classified under broad common themes.

Agriculture as a way of life

- I love to farm – it offers a high quality of life and wonderful experiences.
- We have a family farm not a corporation.
- My farm is not just about making money.
- If you watch your pennies and watch your debt, you won't lose any sleep and you will live comfortably - maybe you will be 10 years behind everyone else, but what's wrong with that?
- You can make a living if you have low debt and are ahead of the game – but overall, you have to work too many hours for the money you earn.
- I enjoy farming because it is a good way to raise a family. However, with current milk prices, we would not encourage our children to farm.
- Farming is a good way to raise a family – but doesn't provide good income – that's why we resort to off farm jobs.
- We like our way of life on the farm – it's a great place to raise kids – but the way things have gone in the last 20 years, I will do everything I can to steer my kids away from agriculture.
- I have not pushed my sons to take over the farm because I feel there are a lot better ways of making a decent living without having to sacrifice your dignity by taking whatever you get offered for your produce.
- I recently suffered a stroke – I don't know if I can keep farming because I can't afford to hire someone.
- Farm instability can cause family conflicts – you can burn out before you are able to retire comfortably.
- People should pay the farmer like the city person – everyone gets cost of living adjustments except the farmer.

- The farm crisis isn't just about the farmer, it's about rural communities.

Competition – "small versus big"

- Bigger is not better.
- The big producers everyone (government, banks etc…) is pushing for hurt small communities (i.e. they don't buy local).
- It's very difficult for the small farmer to obtain loans.
- Government and financial institutions seem to be promoting larger operations – I don't understand why a family farmer can't get a low interest loan to replace a worn TMR, but a large farmer can receive $500,000 to build a new lagoon.
- Small dairy farmers don't count – we're too little to matter.
- Environmental irresponsibility of larger producers is making it very difficult for smaller operators.
- Contracting prices for large producers are killing the smaller farmers.

The role of government

- Who makes all these the regulations? Have they ever even seen a dairy farm? Federal regulators seem to be "out of touch."
- We don't want any government "hand-outs," we only ask for a fair price.
- Government controls should be kept to a minimum unless we do something wrong. Government regulations can squeeze out the smaller producers.
- I believe our government wants food to be as cheap as possible for the American public, no matter how many farmers go out of business in the process.
- Government should not favor the bigger farmers.
- Governmental action / interference only helps the larger producer.
- Increased environmental regulations on manure hurts the smaller farmer – controls are necessary for large pits, but smaller pits don't cause the same problems.

- Are tax dollars being evenly distributed? Larger producers seem to get a disproportionate share.

- Government should control the expansion of large dairies – not so much to control production and raise prices, but to maintain employment in other dependent industries (i.e. farm implement manufacturers).

- Government should guarantee fair and equal access to all markets – they should eliminate volume premiums, free trucking and discount prices for volume purchases.

- There should be no volume premiums – hauling charges should be the same for everyone.

- Volume premiums threaten the survival of small dairy producers.

- Government should reduce the tax burden on farmland.

- Net worth is still taxed too heavily when you sell land.

- I think we have to do something about the capital gains tax. These old guys out here complain about capital gains when they sell the farm. When you buy land for $100 an acre in 1965 and try to sell it for $1,500 in 2000 you should pay capital gains tax on it. If anything they should raise the tax. If the government gives someone a break on capital gains tax it should be the ones who sell their farm to someone who will keep milking cows and raise the capital gains tax to the ones who sell it to a city slicker.

- "I just really feel the government needs to step in and not let these milk prices fall below $12.00. We need that much to survive."

- They should pass a law that says if you run more than 500 acres you shouldn't get any government checks. Bigger producers get bigger government welfare checks.

- There should be a ban on Prosilac (rBST) – the long-term effect on humans is still unclear. rBST has also been known to cause premature and stillborn births in dairy cows.

- The Cheese Exchange should be moved back to Green Bay – the market there was less prone to fluctuations.

Exports

- We need to bolster our exports – "All we hear about on the farm is surplus of milk, cheese and corn. The St. Cloud Times states that 95.5% of all the people in the world live outside the U.S. They also state that 30% of all the world's population goes to bed hungry every night. Does this sound like a food surplus? There are too many leeches between the store and the farmer."

Prices for dairy and other agricultural commodities

- The problem with milk prices lies beyond the farm gate – processors are making all the money.

- In December, I received $10.75 per cwt. Skim milk is then sold in the store for $37.20 per cwt. Mind you that is with all the fat removed, to me that just isn't right.

- Small (1 family) farms are being discriminated against - because we milk only 20 cows and cannot produce higher volume, we get $1 to $2 less for our milk - some co-ops won't even take our milk because of low volume – since hauling charges are so high, we can't get our milk to market.

- Price fluctuations have made long term planning very difficult.

- We have a minimum wage in this country, why not a minimum base price for food?

- While the minimum wage goes up, farm prices haven't changed much in the last 30-40 years.

- People have no problem paying $25,000 - $30,000 for a vehicle or boat, but they complain when they have to pay $3.00 per gallon of milk to keep their bodies healthy.

Stearns County

- Stearns County is good dairy country, a great infrastructure and great people. To ensure dairy continues in Stearns County we will have to work with and understand our city and rural neighbors wants and desires. With communication and understanding both dairy and rural families can enjoy all that Stearns County offers.

The future of farming

- Urban populations are increasingly losing touch – ignoring the important role that farmers play.
- Our land is more scenic than farmable to the next generation – it is better suited for development.
- It's hard to stay in farming with the prices we're getting. Land is being sold for $10,000 an acre for residential and more commercial uses.
- Organic farming may be an answer for smaller producers - produce organic soybeans and milk to exploit niche markets
- I would like to see more of the younger generations involved in farming.
- To get a start in dairy you need to already have a solid financial base.
- We need to provide more assistance to young people interested in getting started – providing low interest rates, special tax breaks etc…
- Younger people are not willing to invest time on the farm.
- Hard to encourage younger generation to stay on the farm when prices are so low and they could be making much more with a good education

Education

- I think agricultural colleges should emphasize marketing – this is perhaps more important than just production efficiency. Also there is a greater need to understand the use of bargaining power through organized groups (NFO, FU etc…)

Conclusions

This was an in-depth mail out survey to dairy farmers in Stearns County in January 2000. The survey was 24 pages in length. This paper summarizes the survey information. There were 283 returned surveys with 227 of those being useable.

An interesting highlight of this survey is the trend to fewer and larger farms. The expansion pattern from 1994 to 1999 on the survey farms has been that most farms either stayed within the same size group or moved to the next larger herd size group (See Table 7). The same pattern of moderate increases in herd size appears when looking at expected herd size in 2004. Most farmers indicate they will either remain the same or move up one herd-size group.

Most of the dairy farms in Stearns County had stanchion or tie stall barns with pipeline milking system. Milking parlors were used on less than 20 percent of the reporting farms.

The average age of the survey respondents was 46 years. This is slightly less than the 1997 Census of Agriculture age for Minnesota dairy farmers at 48 years. When looking at future plans over the next 3-5, about one-third of respondents indicated they are likely to exit dairy farming, 1/3 indicated they plan to remain about the same and 1/3 indicated they expected to expand their dairy operation.

Farm input purchases averaged $58,800 per farm in 1999 on the survey farms in Stearns County. The majority of these purchases (over 85%) were made within Stearns County. Over 90% of household purchases made by the survey farms were made in Stearns County. The economic spin-offs of dairy farming in Stearns County are substantial.